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Mandalka et al.

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(54) **HANDHELD WORK APPARATUS HAVING A DRIVE MOTOR FOR DRIVING A WORK TOOL AND METHOD FOR OPERATING SAID APPARATUS**

(58) **Field of Classification Search**
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See application file for complete search history.

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(56) **References Cited**

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U.S. PATENT DOCUMENTS

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4,079,708	A	3/1978	Wieland et al.	
4,196,836	A *	4/1980	Becht	A61B 17/0684 227/110
4,302,880	A	12/1981	Elfving et al.	
4,406,066	A	9/1983	Itzrodt	
5,215,049	A	6/1993	Wolf	
5,466,183	A *	11/1995	Kirn	B23D 45/16 173/170

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 511 days.

(Continued)

FOREIGN PATENT DOCUMENTS

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CN	201092068	Y	7/2008
DE	36 08 941	A1	9/1987
JP	S57-123928	U	8/1982

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(57) **ABSTRACT**

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(52) **U.S. Cl.**

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(2013.01); **B25F 5/02** (2013.01); **B27B**
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A handheld work apparatus has a drive motor for driving a tool, an operating element for operating the drive motor, a first inhibiting unit and a second inhibiting unit. Each inhibiting unit has a disable state and an enable state. The operating element is inhibited for operating the drive motor when at least one of the inhibiting units is in its disable state. The work apparatus further has a locking device which locks the first inhibiting unit in its enable state if the second inhibiting unit is in its enable state. A method for operating the work apparatus provides that the first inhibiting unit is locked in its enable state when the first inhibiting unit and the second inhibiting unit are situated in their enable states at the same time.

14 Claims, 10 Drawing Sheets

